**WHAT IS CLAIMED:**

1. A color scannerless range imaging system for capturing both color and range information from illumination reflected from a scene, said color scannerless range imaging system comprising:

an illumination system for illuminating the scene with modulated illumination of a predetermined modulation frequency, whereby some of the modulated illumination is reflected from objects in the scene;

a sequentially selectable color filter arrangement positioned in an optical path of the reflected illumination and comprised of a first color filter that preferentially transmits the reflected modulated illumination and a plurality of other color filters that preferentially transmit reflected unmodulated illumination;

a control system for driving the color filter arrangement to sequentially provide each of the color filters in the optical path;

an image intensifier receiving the reflected illumination and including a modulating stage for modulating the reflected modulated illumination from the scene with the predetermined modulation frequency, thereby generating phase images from which the range information is obtained; and

an image capture system including an image responsive element for capturing a plurality of images output by the image intensifier, including (a) a plurality of phase images corresponding to the reflected modulated illumination, whereby the modulation of the reflected modulated illumination incorporates a phase delay corresponding to the distance of objects in the scene from the range imaging system, and (b) a plurality of color images of reflected unmodulated illumination corresponding to color in the scene.

2. The range imaging system as claimed in claim 1 wherein the image intensifier includes a micro-channel plate.

3. The range imaging system as claimed in claim 1 wherein the image intensifier is interposed in the optical path between the image responsive element and the color filter arrangement.

4. The range imaging system as claimed in claim 1 wherein the image responsive element is a photosensitive film.

5. The range imaging system as claimed in claim 1 wherein the image responsive element is an electronic image sensor.

6. The range imaging system as claimed in claim 1 further comprising means for storing the color and phase images as a bundle of associated images.

7. The range imaging system as claimed in claim 1 wherein the image responsive element captures a plurality of phase images corresponding to the reflected modulated illumination, wherein each phase image incorporates the effect of the predetermined modulation frequency together with a phase offset unique for each image.

8. The range imaging system as claimed in claim 7 wherein each unique phase offset $\theta$ is given by $\theta_i = 2\pi i / 3; i = 0,1,2.$

9. The range imaging system as claimed in claim 1 wherein the illumination system includes a laser illuminator for producing the modulated illumination.

10. The range imaging system as claimed in claim 1 wherein the illumination system includes a plurality of light emitting diodes for producing the modulated illumination.

11. The range imaging system as claimed in claim 1 wherein the predetermined modulating frequency is an infra-red frequency and said first color filter is an infra-red filter.

12. The range imaging system as claimed in claim 1 wherein said other color filters comprise red, green and blue filters.

13. The range imaging system as claimed in claim 1 wherein the illumination system also emits unmodulated illumination and the reflected unmodulated illumination includes at least some of the emitted unmodulated illumination.

14. The range imaging system as claimed in claim 1 wherein the reflected unmodulated illumination includes ambient illumination reflected from objects in the scene.

15. The range imaging system as claimed in claim 2 wherein the color filter arrangement is a color filter wheel.

16. The range imaging system as claimed in claim 2 wherein the color filter arrangement is an electro-optically tunable color filter.

17. A method for capturing both color and range information from illumination reflected from a scene, said method comprising the steps of:

illuminating the scene with modulated illumination of a predetermined modulation frequency, whereby some of the modulated illumination is reflected from objects in the scene;

sequentially positioning an arrangement of color filters in an optical path of the reflected illumination including a first color filter that preferentially transmits the reflected modulated illumination and a plurality of other color filters that preferentially transmit reflected unmodulated illumination;

using an image intensifier to modulate the reflected modulated illumination from the scene with the predetermined modulation frequency, thereby generating phase images from which range information is obtained; and

capturing a plurality of images output by the image intensifier, including (a) a plurality of phase images corresponding to the reflected modulated

illumination when the first color filter is provided in the optical path, whereby the modulation of the reflected modulated illumination incorporates a phase delay corresponding to the distance of objects in the scene from the range imaging system, and (b) a plurality of color images of reflected unmodulated illumination corresponding to color in the scene when the other color filters are provided in the optical path.

18. The method as claimed in claim 17 further comprising the step of storing the color and range images as a bundle of associated images.

19. The method as claimed in claim 17 wherein a plurality of phase images are captured corresponding to the reflected modulated illumination, and each phase image incorporates the effect of the predetermined modulation frequency together with a phase offset unique for each image.

20. The method as claimed in claim 19 wherein each unique phase offset $\theta$ is given by $\theta_i = 2\pi i / 3;\ i = 0,1,2$.

21. The method as claimed in claim 17 wherein the predetermined modulating frequency is an infra-red frequency and said first color filter is an infra-red filter.

22. The method as claimed in claim 17 wherein said other color filters comprise red, green and blue filters.

23. The method as claimed in claim 17 wherein the step of illuminating the scene also emits unmodulated illumination and the reflected unmodulated illumination includes at least some of the emitted unmodulated illumination.

24. The method as claimed in claim 17 wherein the arrangement of color filters are provided in a color filter wheel.

25. The method as claimed in claim 17 wherein the arrangement of color filters are provided by an electro-optically tunable color filter.

26. An attachment for a camera system for capturing both color and phase information from illumination reflected from a scene, said camera system including an illumination system for illuminating the scene with modulated illumination of a predetermined modulation frequency, whereby some of the modulated illumination is reflected from objects in the scene, and an image responsive element for capturing the reflected illumination; said attachment comprising:

a sequentially selectable color filter arrangement positioned in an optical path of the reflected illumination and comprised of a first color filter that preferentially transmits the reflected modulated illumination and a plurality of other color filters that preferentially transmit reflected unmodulated illumination;

a control system for driving the color filter arrangement to sequentially provide each of the color filters in the optical path;

an image intensifier receiving the reflected illumination and including a modulating stage for modulating the reflected modulated illumination from the scene with the predetermined modulation frequency, thereby generating the phase information, whereby the image responsive element captures a plurality of images output by the image intensifier, including (a) a plurality of phase images corresponding to the reflected modulated illumination, whereby the modulation of the reflected modulated illumination incorporates a phase delay corresponding to the distance of objects in the scene from the range imaging system, and (b) a plurality of color images of reflected unmodulated illumination corresponding to color in the scene.

27. The attachment as claimed in claim 26 wherein the color filter arrangement is a color filter wheel.

28. The attachment as claimed in claim 26 wherein the color filter arrangement is an electro-optically tunable color filter.